REMARKS

Claim 7 has been amended to clarify the claim language as requested by the Examiner and to further clarify the nature of Applicants' claimed invention. Support for the amendment to claim 7 can be found, for example, at page 6, lines 32 – 36 of the specification as filed.

The rejection of claims 1 – 16 under 35 USC 102(b)/(e) or 35 USC 103(a) over Aldrich (Products for Superconductivity Research) is respectfully traversed. Aldrich fails to describe a compound that has all of the features of the claimed invention. The claimed invention requires a zinc cation content of at least 50 ppm by weight. Aldrich is silent as to the amount of zinc contained within the superconducting powders. Furthermore, nothing within Aldrich would cause those of skill in the art to understand that the level of zinc cations within the superconductor powders was at least 50 ppm, as required by the claimed invention.

First, consider product 35,746-4, which appears to be the YBaCuO superconductor powder relied on in the Office Aciton. Aldrich states that the total level of metal impurities in this superconductor powder is less than 1000 ppm. Even if one sets aside the element technetium (only man-made) and the short-lived/unstable members of the Actinide and Lanthanide series, the 1000 ppm total metal impurity level represents an aggregate total impurity level for over 50 different elements. Aldrich provides no indication of what amount, if any, of zinc is typically present out of this long list of possible impurities. Based on the disclosure in Aldrich, one of skill in the art would not have an expectation

that the superconductor powders described in Aldrich would contain any particular amount of zinc. In particular, one of skill in the art would not conclude that the level of zinc cations is 50 ppm or greater, as required by the claimed invention.

Additionally, Aldrich provides information about other metals that are present in higher quantities. For example, product number 32,862-6 is another YBaCuO superconductor powder that has a lower price per gram. Those of skill in the art would typically assume that this corresponds to a powder with a higher level of impurities. Again, Aldrich makes no reference to the amount of zinc within the powder. However, Aldrich does note that any metal impurities not specifically named are present at less than 100 ppm. Thus, even in a lower quality superconductor powder, the potential zinc impurity level is less than 100 ppm. This would lead one of skill in the art to expect even lower impurity levels in the higher grade 35,746-4 superconductor powder noted in the Office Action.

Taken as a whole, Aldrich would not lead one of skill in the art to conclude that any particular level of zinc was present within the superconductor powders, and there is simply no teaching or disclosure that even suggests a minimum zinc content of greater than 50 ppm by weight. Thus, a rejection under 35 USC 102 or 35 USC 103 over Aldrich is improper, as the products described in Aldrich do not have all of the required features of the claimed invention and no impetus is provided to modify the products described in Aldrich to arrive at the claimed invention. Reconsideration and withdrawal of this rejection are respectfully requested. (Note that if the Office Action intended to imply that some level of

zinc impurity is inherent to all superconductor powders, Applicants respectfully request that a reference be provided.)

The rejection of claims 1 – 16 under 35 USC 102(b)/(e) or 35 USC 103(a) over Bornemann et al., US Patent 6,258,753, is also respectfully traversed. Like Aldrich, Bornemann et al. discloses YBaCuO superconductors but does not address the amount of zinc within the composition. At best, Bornemann et al. notes that the level of transition metal impurities should be less than 2000 ppm. Even if the Actinide and Lanthanide series metals are entirely excluded, this constitutes at least 25 possible metal impurities. (It is not clear if Bornemann et al. intended to include the Actinide and Lanthanide series metals as "transition metals." However, the use of Sm_2O_3 as part of the seed crystal formulation in Bornemann et al. suggests that at least Lanthanide series elements are relevant. This would increase the potential number of possible transition metal impurities to roughly 40.) For reasons similar to those stated above, taken as a whole, Bornemann et al. provides no teaching or disclosure that would lead one of skill in the art to conclude that at least 50 ppm of zinc cations are present within the disclosed superconductor materials. Thus, a rejection under 35 USC 102 or 35 USC 103 over Bornemann et al. is improper, as the products described in Bornemann et al. do not have all of the features required by the claimed invention and no impetus is provided to modify the products described in Bornemann et al. to arrive at the claimed invention. Reconsideration and withdrawal of this rejection are respectfully requested.

The rejection of claims 1 – 16 under 35 USC 102(b) over Bichile et al., Superconductor Science and Technology, vol. 4, p 57 – 61 (1991), is also

respectfully traversed. Claims 1 – 13 and 16 require a superconducting molded body obtained by melt texturing. In order to make a superconducting molded body obtained by melt texturing, the starting materials must be melted. Bichile et al. discloses superconductor samples made by sintering. By definition, sintering is a process that causes a material to become a coherent mass without melting. The superconducting molded body of the claimed invention, obtained by a melting process, is structurally distinct from an unmelted, sintered material as described in Bichile et al. Thus, the superconductor samples described in Bichile et al. are not molded bodies obtained by a melt texturing process, as required by the claimed invention. Therefore, claims 1 – 13 and 16 are allowable for at least this reason.

Additionally, the superconductor samples described in Bichile et al. do not have the composition required by the claimed invention in claims 2, 7, 14, and 15. In Bichile et al., the superconductor material with the lowest zinc content has the formula

$$YBa_2Cu_{2.97}Zn_{0.03}O_7$$

(obtained by setting x = 0.01 in the formula found in the last paragraph of the introduction section on page 57.) The molecular weight of the above compound is 666.3. Since zinc has a molecular weight of 65.4, the zinc content by weight of the above compound is (65.4 x 0.03)/666.3 = 0.0029446 = 0.295%, or 2950 ppm. Claims 2, 14, and 15 require a maximum zinc cation content by weight of at most 0.100%, or 1000 ppm. Similarly, claim 7 requires a maximum total content by weight of zinc cations, strontium cations, calcium cations and aluminum cations

of less than 0.120%, or 1200 ppm. Thus, the product described in Bichile et al. does not have all of the features required by the claimed invention in claims 2, 7, 14, and 15, and these claims are allowable for at least this additional reason. Based on the above, reconsideration and withdrawal of the rejection of claims 1 – 16 over Bichile et al. is respectfully requested.

In view of the foregoing amendments and remarks, the application is respectfully submitted to be in condition for allowance, and prompt, favorable action thereon is earnestly solicited.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #175/50221).

Respectfully submitted,

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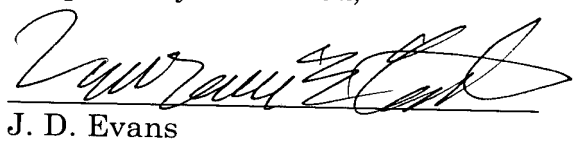

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